

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

Claims 1-27. (Canceled).

Claim 28. (Currently Amended): The method of Claim 29, wherein said adult tissue-specific cells are of a liver section and growth of said cells is induced by treating, *in vitro*, a resection surface of said liver section with EPO or a derivative thereof.

Claim 29. (Currently Amended): A method for local initiation, termination and structural guidance of three-dimensional[[.]] growth of adult tissue-specific cells on a biological matrix or a supporting structure in an in-vitro tissue regeneration process comprising multiplying and differentiating adult tissue-specific cells *in vitro* on a biological matrix or a supporting structure, in the presence of exogenous erythropoietin (EPO) or a derivative thereof, wherein the growth of said cells is locally initiated, terminated and structurally guided ~~such that said three-dimensional growth of said cells is achieved under the influence of EPO~~in the absence of supporting cells.

Claims 30-33. (Canceled).

Claim 34. (Currently Amended): The method as claimed in claim 29, wherein the biological matrix or athe supporting structure acts as an inductive substrate for said three-dimensional growth.

Claim 35. (Canceled).

Claim 36. (Currently Amended): The method as claimed in claim 34, wherein the biological matrix or the supporting structure is selected from the group consisting of an implant, a stent, a patch, a hydrogel, a bone substitute material, an allogenic acellularized or non-acellularized tissue, an autologous acellularized or non-acellularized tissue, a xenogenic acellularized or non-acellularized tissue, a synthetic tissue, and a fabric.

Claims 37-52. (Canceled).

Claim 53. (Previously Presented): The method as claimed in claim 29, wherein said adult tissue-specific cells are at least one member selected from the group consisting of osteoblasts, fibroblasts, hepatocytes and smooth muscle cells.

Claim 54. (New): The method as claimed in claim 29, wherein the biological matrix or the supporting structure is coated with a biodegradable (bio-) polymer layer comprising said exogenous EPO.

Claim 55. (New): The method as claimed in claim 54, wherein said biodegradable (bio-) polymer is selected from the group consisting of fibrin, plasma, blood, collagen and polylactides.